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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,396	03/18/2004	Ross C. Berryhill	36572-74643	5531
30450	7590	06/26/2009	EXAMINER	
CUMMINS, INC. 11 SOUTH MERIDIAN INDIANAPOLIS, IN 46204			HYUN, PAUL SANG HWA	
			ART UNIT	PAPER NUMBER
			1797	
			NOTIFICATION DATE	DELIVERY MODE
			06/26/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

indocket@btlaw.com

Office Action Summary	Application No. 10/803,396	Applicant(s) BERRYHILL ET AL.	
	Examiner PAUL S. HYUN	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 73-91 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 73-91 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 6, 2009 has been entered.

Claims 73-91 are currently pending. Applicant cancelled all previously pending claims.

The amended Specification filed by Applicant on April 6, 2009 to update the status of a related application has been acknowledged.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. **Claims 73, 74, 82-84, 89 and 91** are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. (US 5,394,744) in view of Scheying (US 2003/0033799 A1) and Arsenault et al. (US 6,029,044).

James et al. disclose a computer system coupled to a vehicle for monitoring various machineries of the vehicle, including the catalytic converter (see line 26, col. 3). The system comprises a sensor 11 for determining the efficiency of the converter, an averaging filter 15 that converts the sensor signal to a filtered value, and a comparator 17 that compares the filtered value to a threshold value and emits a fault signal to a diagnostic indicator if the filtered value exceeds the threshold value (see Abstract). The invention disclosed by James et al. differs from the claimed invention in that James et al. do not disclose that the claimed parameters are monitored. In addition, James et al. do not disclose the use of a second averaging filter in determining a fault value.

With respect to the parameters, Scheying discloses a system for monitoring the performance of catalytic converters. The reference discloses the need to monitor the

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concentration of the reagent solution supplied to a catalytic converter to optimize the efficiency of the catalytic converter (see [0004]-[0008]). The system also measures the temperature of the reagent solution (see [0018]). The system further comprises a means for detecting the amount of the reagent solution stored in the reagent supply (see [0030]). The reference discloses that the amount of reagent stored in the supply affects the concentration of the reagent delivered to the catalytic converter (see [0022]). Thus, the system determines a quality value that is based on the concentration of the reagent solution, the temperature of the reagent solution, and the amount of the reagent solution in the reservoir. The system monitors these parameters and modifies the performance of the catalytic converter in response to the measurements of these parameters. The system further comprises a heating unit for heating the reagents fed to the catalytic converter (see [0043]). In light of the disclosure of Scheying, it would have been obvious to one of ordinary skill in the art to enable the system disclosed by James et al. to monitor the parameters disclosed by Scheying et al. and modify the performance of the catalytic converter accordingly in the event that a measurement value exceeds a threshold value, including modifying the performance of the heating unit based on the measurements and the existence of any fault signals.

With respect to the second filter, Arsenault et al. disclose a system for detecting a malfunctioning signal. The system comprises two filters wherein one filter is configured to isolate noise from the signal. A comparator then compares the difference of the output of the two filters to an upper threshold value and a lower threshold value, thereby eliminating noise from the calculation (see Abstract). It would have been obvious to one of ordinary skill in the art to provide a second averaging filter to the system disclosed by James et al. to eliminate the effects of noise.

4. **Claims 75-81 and 85-88** are rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. in view of Scheying and Arsenault et al. as applied to claims 73, 74, 82-84, 89 and 91, and further in view of Masuda et al. (US 5,251,299).

None of James et al., Scheying and Arsenault et al. disclose the use of a fault detection timer.

Masuda et al. disclose a device for detecting system malfunction wherein the device comprises a fault detection timer that logs a fault value to a memory after a predetermined set of time, and stores the value to a memory for a predetermined length of time before it is deleted (see lines 5-20, col. 8). The fault detection timer is designed to filter out false positive signals indicating malfunction. In light of the disclosure of Masuda et al., it would have been obvious to one of ordinary skill in the art to incorporate a fault detection timer to the modified James et al. system to filter out false positive signals indicating malfunction.

5. **Claim 90** is rejected under 35 U.S.C. 103(a) as being unpatentable over James et al. in view of Scheying and Arsenault et al.. as applied to claims 73, 74, 82-84, 89 and 91, and further in view of Ohmura et al. (US 2002/0103583 A1).

None of James et al., Scheying and Arsenault et al. disclose a wireless transceiver.

Ohmura et al. disclose that vehicles comprising wireless transceiver for transmitting information regarding vehicle malfunction to a remote vehicle diagnostic system is well-known in the art (see [0006]). In light of the disclosure of Ohmura et al., it would have been obvious to one of ordinary skill in the art to provide the modified James et al. system with a wireless transceiver for wirelessly transmitting information regarding vehicle malfunction to a remote diagnostic system.

Response to Arguments

6. Applicant's argument with respect to the claims has been considered but it is moot in view of the new grounds of rejection. However, Applicant's argument will be addressed because it remains pertinent.

Applicant argues that the claimed invention is patentable over the prior art because prior art does not disclose a long-run averaging filter or a short-run averaging filter. This argument is not persuasive because the terms "long-run" and "short-run" are not defined in the Specification, and they are not well established in the art. In terms of classification, the distinction between a long-run averaging filter and a short-run averaging filter is unclear. Consequently, any averaging filter can be deemed a short-

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run or a long-run averaging filter. That said, because the combination of the cited references disclose the use of two averaging filters, the disclosure of the prior art is within the scope of claim 73.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL S. HYUN whose telephone number is (571)272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

6/22/2009

/Yelena G. Gakh/
Primary Examiner, Art Unit 1797

/Paul S Hyun/
Examiner, Art Unit 1797